

November 18, 2022

KEY TAKEAWAYS

- Case rates and hospitalizations remain low across Virginia. Some signs suggest the possibility of future growth, but that has not yet materialized.
- Case rates are down again from last week (10.8 vs 12.4 per 100,000). Hospital and ICU occupancy figures are slightly lower as well. Only one locality is reporting "High" community levels, where masking is recommended in indoor public places. Indoor masking is also recommended for high risk individuals in the 29 locales with "Medium" community levels.
- Most health districts are still in declining or plateaued case trajectories. Nine are now in growth trajectories, but none of them are surging. The statewide effective reproduction number (R_e) is up slightly but remains below one (0.979).
- The new BQ.1, BQ.1.1, BF.7 and BN.1 variants now account for more than 50% of all new cases. We expect BA.5 to be eliminated in the coming weeks. The new variants have immune escape advantages and can cause reinfections. Modeling suggests that they could lead to another surge when coupled with winter weather. They have already done so in Europe, but the surges they caused were relatively mild.
- Influenza is ravaging Virginia and now accounts for 40% of all hospitalizations. Vaccines and good prevention are the best way to protect against **both** diseases.

1,004,306

Total Bivalent Booster Doses
Administered by Nov. 17, 2022

20% / 51%

Of eligible Virginians / Seniors
have received a Bivalent
Booster as of Nov 17, 2022

27% / 53%

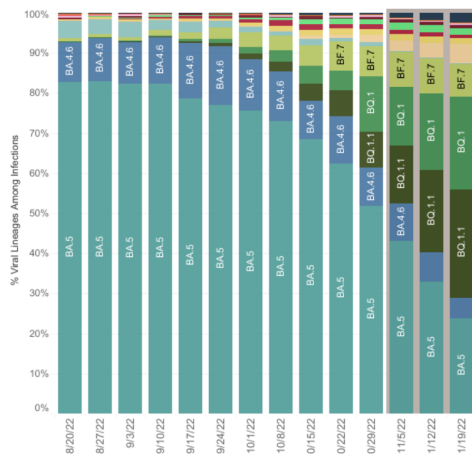
Of Virginians / Seniors have
received an annual Flu shot as
of November 17, 2022

1 / 29

Virginia Localities at High /
Medium Community Levels
as of November 17, 2022

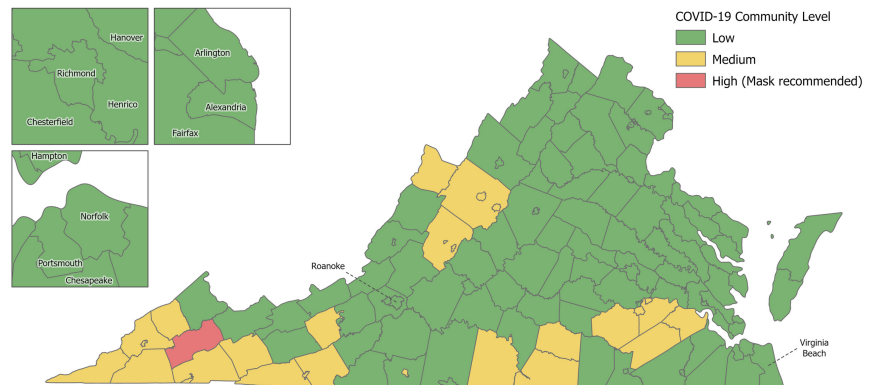
KEY FIGURES

Variant Mix – HHS Region 3



CDC Community Levels

As of November 17, 2022

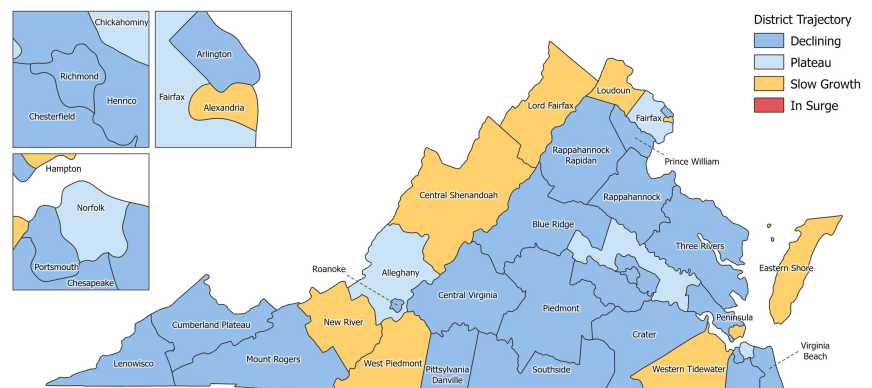


Click Map for Full Size Image

Growth Trajectories: No Health Districts in Surge

Status	# Districts (prev week)
Declining	22 (11)
Plateau	4 (7)
Slow Growth	9 (15)
In Surge	0 (2)

Click Table for Dashboard



Click Map for Full Size Image

THE MODEL

The UVA COVID-19 Model and weekly results are provided by the UVA Biocomplexity Institute, which has over 20 years of experience crafting and analyzing infectious disease models. It is a health district-level **S**usceptible, **E**xposed, **I**nfected, **R**ecovered (SEIR) model designed to evaluate policy options and provide projections of future cases based on the current course of the pandemic. The Institute is also able to model alternative scenarios to estimate the impact of changing health behaviors and state policy.

*COVID-19 is a novel virus,
and the variant mix
changes periodically.
These models improve
as we learn more.*

THE SCENARIOS

Unchanged: The model uses scenarios to explore the potential paths the pandemic may take under future conditions. Model projections take a variety of factors into account, including current variants, vaccine uptake, vaccination/boosting rates, previous infection, waning immunity, weather, and behavioral responses. **All models now account for bivalent boosters.** Unless otherwise specified, they assume that they will match the 3rd dose booster rollout. The **"Adaptive"** scenario represents the current course of the pandemic, projecting it forward with no major changes. The **"VariantX"** modifier explores the potential impact of a new variant. This hypothetical variant is imagined as having the same immune escape and transmissibility advantages over BA.4/5 that BA.4/5 did over the earlier BA.2. See [page three of the July 15 report](#) for details. The **"FallWinter"** modifier layers seasonal increases associated with colder weather, holiday gatherings, and travel, on top of the base scenarios. It does this by artificially adjusting transmissibility between September and January to match transmissibility from the same time last year. The **"OptBooster"** (optimistic) modifier assumes that bivalent booster coverage will increase *beyond* the current pace and be 25% higher than 3rd dose boosters from Fall of 2021. The new **"NoMoreBooster"** examines the impact of a reduced vaccine rollout, and assumes that boosters stop at current levels.

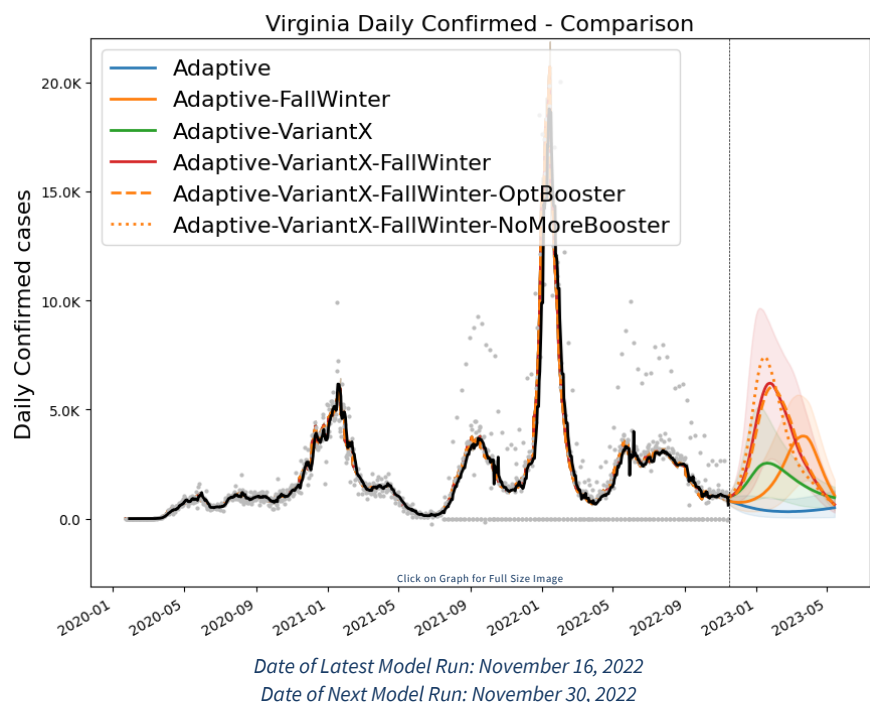
MODEL RESULTS

Updated: As always, the current course **"Adaptive"** scenario is shown in blue. This scenario projects a continued decline of cases. In this scenario, Virginia will fall below 500 daily cases by Christmas.

Both the **"Adaptive-FallWinter"** (orange) and **"Adaptive-VariantX"** (shown in green) scenarios project mild surges. The former peaks at 3,800 daily cases in late March, the latter at 2,500 daily cases in late January.

The **"Adaptive-VariantX-FallWinter"** (red) combines both a hypothetical new variant with the seasonal forcing of Fall / Winter. The combination allows for a significant surge, peaking at about 6,200 daily cases in late January, before steadily declining.

Both **"OptBooster"** and **"NoMoreBooster"** scenarios (dashed orange lines) are applied to the VariantX-FallWinter scenario. They show that increasing booster uptake could prevent over 7,000 cases. If booster rates slow, this could cause an extra 28,000 cases.

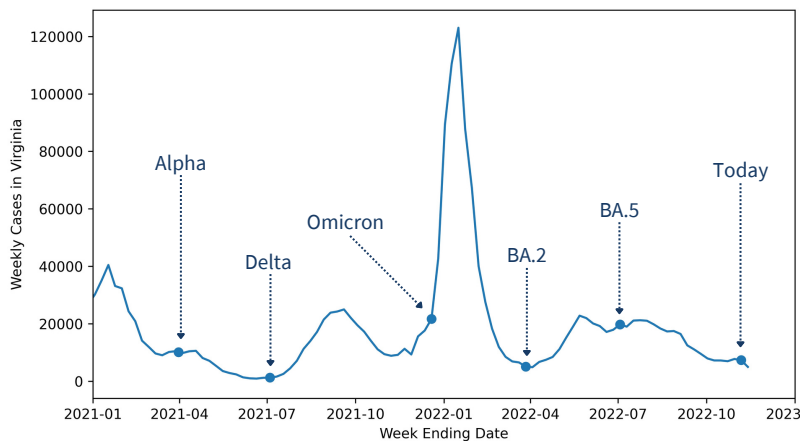


Please note: The data and projections shown here reflect reported cases. During the Omicron wave, testing shortages resulted in far fewer infections being reported as cases. This suggests fewer total infections than experienced in January. Please see [page three of the May 13th modeling report](#) for more details.

[\(Explore the model results in detail on this dashboard\)](#)

AN EXPANDING NUMBER OF VARIANTS

This week marks another milestone in the COVID-19 pandemic. The BA.5 subvariant, which had been dominant since summer, has begun to be overtaken by new sublineages. However, no individual subvariant seems to be dominating. BQ.1 and BQ.1.1 are currently leading the pack, but Virginia is also seeing growth of BF.7 and BN.1. BA.2.75.2 is also present but not growing significantly. Together these new variants account for over half of all statewide cases. All of them have significant immune escape advantages over BA.5. This allows them to cause reinfections in those who have already recovered from an earlier case of COVID-19. As a result, they carry with them the potential to cause another surge. This risk of a surge is further increased by the arrival of colder weather and holiday gatherings. But while some growth is likely, there is some cause to be optimistic.



Here we plot the dates on which major variants became dominant in Virginia. These are shown alongside weekly case rates. Each variant begins to influence case rates before it even reaches the 50% mark. But not all "new" variants caused massive surges.

In both France and the UK, surges caused by BQ.1 were mild (see graph to the right). Hospitalizations never rose above summer peaks, and both nations have already begun seeing declines. The next two weeks will be very telling for Virginia. Given the current trends and experiences of other nations, we are expecting an increase in cases and hospitalizations, but not to the level seen last holiday season.

Despite the good news, models do still suggest winter growth. Moreover, we are now in what may be the worst flu season since 2009. Currently, about 40% of Virginia's respiratory hospitalizations are flu related, and flu rates could continue to worsen in the coming months. Combined with respiratory syncytial virus (RSV), which is also circulating at unusually elevated levels, the "tridemic" could seriously stress Virginia's hospitals. Though there is no vaccine for RSV, the latest bivalent COVID19 boosters and flu vaccine both show promise. The flu shot seems to be well targeted this year. It includes the H3N2 and H1N1 Influenza A strains, which together account for 95% of new cases in Virginia. Meanwhile, Moderna has released preliminary data suggesting that the bivalent boosters show "neutralizing activity" against BQ.1.1. Together, these two vaccines represent the best way you can protect yourself and your family. We strongly recommend you get both if you have not already.

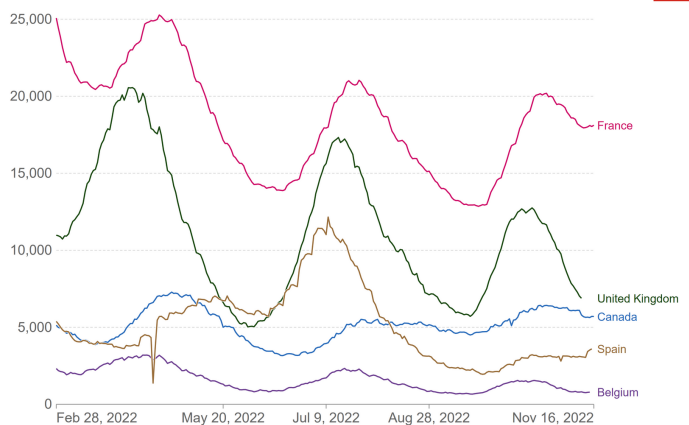
Staying Safe During Thanksgiving

In addition to vaccinating, Virginians should practice good prevention. This is especially true during the upcoming holiday season. Most of this is common-sense. Consider washing your hands regularly and wear a mask where recommended. Watch for symptoms of COVID19 and test when appropriate. Isolate when sick so as not to infect others. Note that wearing a mask can also prevent you from spreading the disease if you must leave isolation. We hope you have a wonderful and safe Thanksgiving!

As seen in the graph to the left, not all new variants cause massive surges. The original Omicron variant certainly did. But Alpha and BA.5 caused blips at best, while Delta and BA.2 caused modest growth. A tsunami of cases as we saw last year is far from guaranteed. In fact, at the moment, case rates and hospitalizations are mostly stable.

Other metrics are also encouraging. Visits to urgent cares and emergency rooms are up slightly, but flu and other respiratory diseases may account for the uptick. None of the states that typically lead Virginia in COVID-19 waves are surging yet. Furthermore, the new subvariants have not caused explosive surges elsewhere in the world.

Number of COVID-19 patients in hospital



Source: Official data collated by Our World in Data - Last updated 17 November 2022

OurWorldinData.org/coronavirus • CC BY

Hospitalizations for select nations where BQ.1.1 is dominant. The UK and France have already crested their mild surge, while the others show limited growth. ([Source](#))